Amendments to the Claims:

This listing of claims will replace all prior listings of claims in the application:

Listing of Claims:

1-61. (canceled)

62. (Original) A method for screening for primary N-hydroxylamines which reduce oxidative damage to, or delay senescence of cells, comprising the steps of:

contacting cells with a candidate primary N-hydroxylamine under conditions whereby, but for the presence of the hydroxylamine, the cells present a reference amount of oxidative damage or senescence;

detecting post-treatment amounts of oxidative damage or senescence of the cells;

wherein a lesser amount of post-treatment than reference amounts of oxidative damage or senescence indicates that the hydroxylamine reduces oxidative damage or delays senescence of the cells.

63. (Previously presented) A method according to claim 62, wherein the cells are in an animal and the hydroxylamine is administered to the animal in a dosage from 100ug to 1g.

64. (Currently amended) A method according to claim 62, wherein the hydroxylamine has the general formula,

$NHOHCR_1R_2R_3$,

wherein R_1, R_2 and R_3 are independently selected from: hydrogen, substituted or unsubstituted (~~C1-C10~~ C1-C18) alkyl, alkenyl, alkynyl, aryl, oxyl, acyl, carboxyl, amino, nitro, nitroso, oxime, hydrazone, azo, thiol, sulfonyl and halide.

65. (Previously presented) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is selected from unsubstituted (C1-C10) alkyl, alkenyl and alkynyl.

66. (Currently amended) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is selected from unsubstituted (C1-C18) alkyl, cycloalkyl, alkenyl and alkynyl, and ~~the R~~ said at least one of R_1, R_2 and R_3 is selected from: CH_3-$(CH_2)_{n1}$, $(CH_3$-$(CH_2)_{n2}$-$)_2$ CH, $(CH_3$-$(CH_2)_{n2}$-$)_3$, cyclopentyl, cyclohexyl, $(CH_2$ =CH-$CH_2)_{n3}$ and (CH ≡C-CH_2-$)_{n3}$, wherein n1 = 1 to 18, n2 = 1 to 17 and n3 = 1 to 3.

67. (Currently amended) A method according to claim 64, wherein ~~at least one of R_1, R_2 and R_3 is selected from hydrogen, unsubstituted (C1-C10) alkyl, alkenyl and alkynyl, and~~ the hydroxylamine is selected from:

N-methylhydroxylamine,
N-ethylhydroxylamine,
N-n-propylhydroxylamine,
N-(n-butyl) hydroxylamine,
N-(n-pentyl)hydroxylamine,
N-(n-hexyl)hydroxlamine,
N-(n-heptyl)hydroxylamine,
N-(n-octyl)hydroxylamine,
N-(n-nonyl)hydroxylamine,
N-(n-decyl)hydroxylamine,
N-(n-dodecyl)hydroxylamine,
N-(n-decahexyl)hydroxylamine,
N-(n-decaoctyl)hydroxylamine,
N-isopropylhydroxylamine,
N-sec-butylhydroxylamine,
N-tert-butylhydroxylamine,
N-cyclohexylhydroxylamine,
N-cyclopentylhydroxylamine,
N-(2-propene)hydroxylamine,
N-(3-butene)hydroxylamine,
N-(2-propyne)hydroxylamine and
N-(3-butyne)hydroxylamine.

68. (Previously presented) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted aryl.

69. (Currently amended) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted aryl, and ~~the R~~ said at least one of R_1, R_2 and R_3 is selected from: mono, di, or tri methyl, methoxy, halo, nitro, amino, hydroxyl and substituted or unsubstituted phenyl, naphthyl, anthryl, phenanthryl, pyridyl, quinolinyl, imidazolyl, benzoxazolyl, pyrrolyl, furanyl, piperidinolyl and tetrahydrofuranyl.

70. (Currently amended) A method according to claim 64, wherein ~~at least one of R_1, R_2 and R_3 is substituted or unsubstituted aryl, and~~ the hydroxylamine is selected from:

N-benzylhydroxylamine,
N-(n-nitrobenzyl)hydroxylamine,
N-(n-methylbenzyl)hydroxylamine,
N-(n-chlorobenzyl)hydroxylamine,
N-(n-aminobenzyl)hydroxylamine,
N-(n-hydroxybenzyl)hydroxylamine,
N-(1,3-diaminobenzyl)hydroxylamine,
N-(1,3-hydroxybenzyl)hydroxylamine,
N-(2,4-diaminobenzyl)hydroxylamine,
N-(2,4-dihydroxybenzyl)hydroxylamine,
Imidazole-2-methylhydroxylamine and
Benzoxazole-2-methylhydroxylamine,

wherein n is selected from 1, 2, 3, 4, 5 and 6.

71. (Previously presented) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) oxyl.

72. (Currently amended) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) oxyl and ~~the R~~ said at least one of R_1, R_2 and R_3 is selected from: hydroxyl, hydroxyalkyl ($HO-(CH_2)_{n1}$), hydroxyaryl selected from benzylalcohol, phenol and naphthol, alkoxy ($O-(CH_2)_{n1}$) and aryloxy selected from phenoxy, benzyloxy and naphthyloxy, wherein n1= 1 to 18.

73. (Currently amended) A method according to claim 64, wherein ~~at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18)alkyl hydroxyl or arylhydroxyl and~~ the hydroxylamine is selected from::

N-(hydroxymethyl)hydroxylamine,
N-(2-hydroxyethyl)hydroxylamine,
N-(3-hydroxypropyl)hydroxylamine,
N-(4-hydroxybutyl)hydroxylamine,
N-(6-hydroxyhexyl)hydroxylamine,
N-(12-hydroxydodecyl)hdyroxylamine,
N-(methoxymethyl)hydroxylamine,
N-(methoxyethyl)hydroxylamine,
N-(methoxyisopropyl)hydroxylamine,
N-(benzyloxymethyl)hydroxylamine and
N-(4-hydroxymethylbenzyl)hydroxylamine.

74. (Previously presented) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) alkylcarboxyl or arylcarboxyl.

75. (Currently amended) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) alkyl or aryl carboxyl and ~~the R~~ said at least one of R_1, R_2 and R_3 is selected from carboxyalkyls and benzyl.

76. (Currently amended) A method according to claim 64, wherein ~~at least one of R_1, R_2 and R_3 is substituted or unsubstituted alkyl (C1-C18) or arylcarboxyl and~~ the hydroxylamine is selected from:

N-(carboxymethyl)hydroxylamine,
N-(2-carboxyethyl)hydroxylamine,
N-(3-carboxypropyl)hydroxylamine,
N-(4-carboxybutyl)hydroxylamine,
N-(5-carboxypentyl) hydroxylamine,
N-(6-carboxyhexyl)hydroxylamine,
N-(4-carboxybenzyl)hydroxylamine and
N-(12-carboxydodecyl)hydroxylamine.

77. (Previously presented) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) ester.

78. (Currently amended) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) ester and ~~the R~~ said at least one of R_1, R_2 and R_3 is selected from alkyl (C1 – C18) and aryl esters.

79. (Currently amended) A method according to claim 64, wherein ~~at least one of R_1, R_2 and R_3 is substituted or unsubstituted alkyl (C1-C18) or arylesters and~~ the hydroxylamine is selected from:

N-(acetyloxymethyl)hydroxylamine,
N-(acetyloxyethyl)hydroxylamine,
N-(acetyloxypropyl)hydroxylamine,
N-(propylcarbonyloxy)methylhydroxylamine,
N-(butylcarboxyloxy)methylhydroxylamine,
N-(tert-butyloxycarboxyl)methylhdyroxylamine,
N-(benzyloxycarbonyl)methylhydroxylamine,
N-(phenyloxycarbonyl)methylhydroxylamine,
N-(3-pyridyloxycarbonyl)methylhydroxylamine and
N-(benzoxazol-5-carbonyloxy)methylhydroxylamine.

80 (Previously presented) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) carbonyl.

81. (Currently amended) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted carbonyl and ~~the R~~ said at least one of R_1, R_2 and R_3 is selected from alkyl (C1 – C18) carbonyls and aryl carbonyls.

82. (Currently amended) A method according to claim 64, wherein ~~at least one of R_1, R_2 and R_3 is substituted or unsubstituted alkyl (C1-C18) or arylcarbonyls and~~ the hydroxylamine is selected from:

N-(acetyl)methylhydroxylamine,
N-(ethylcarbonyl)methylhydroxylamine,
N-(butylcarbonyl)methylhydroxylamine,
N-(phenylcarbonyl)methylhydroxylamine
and
N-(benzylcarbonyl)methylhydroxylamine.

83. (Previously presented) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted alkyl(C1-C18) or aryl amino.

84. (Currently amended) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted alkyl (C1-C18) or aryl amino and ~~the R~~ said at least one of R_1, R_2 and R_3 is selected from primary alkyl amine selected from methylamine, ethylamine, propylamine, butylamine and hexylamine, secondary amine selected from dimethylamine, diethylamine and dipropylamine, tertiary amine selected from trimethyl and trietylamine, and quarternary amine selected from tetramethyl and tetra-ethylammonium salts.

85. (Currently amended) A method according to claim 64, wherein ~~at least one of R_1, R_2 and R_3 is substituted or unsubstituted alkyl(C1-C18) or aryl amine and~~ the hydroxylamine is selected from:
N-aminomethylhydroxylamine,
N-(2-aminoethyl)hydroxlamine,
N-(N-methylamino)methylhydroxylamine,
N-(N,N-dimethylamino)methylhydroxylamine,
N-(N,N,N-trimethylammonium)methylhydroxylamine,
N-(3-aminopropyl)hydroxylamine,
N-(6-aminohexyl)hydroxylamine,
N-(4-aminobenzyl)hydroxylamine,
Hydroxylamine –1-methylpyridinium and
Hydroxylamine-1-methylquinolinium.

86. (Previously presented) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) alkyl or aryl nitro.

87. (Currently amended) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted alkyl(C1-C18) or aryl nitro and ~~the R~~ said at least one of R_1, R_2 and R_3 is selected from alkylnitro selected from nitromethyl, nitroethyl, nitropropyl, nitrobutyl, nitropentyl, nitrohexyl and nitrobenzyl, and arylnitro selected from nitrophenyl and nitronaphthyl.

88. (Currently amended) A method according to claim 64, wherein ~~at least one of R_1, R_2 and R_3 is substituted or unsubstituted alkyl (C1-C18) or aryl nitro and~~ the hydroxylamine is selected from:

N-(nitromethyl)hydroxylamine,
N-(2-nitroethyl)hydroxylamine,
N-(3-nitropropyl)hydroxylamine,
N-(4-nitrobutyl)hydroxylamine,
N-(5-nitropentyl)hydroxylamine,
N-(6-nitrohexyl)hydroxylamine,
N-(4-nitrobenzyl)hydroxylamine and
N-(2,4-dinitrobenzyl)hydroxylamine.

89. (Previously presented) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) nitroso.

90. (Currently amended) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) nitroso and ~~the R~~ said at least one of R_1, R_2 and R_3 is selected from aliphatic nitrosoamines and aromatic nitroso.

91. (Currently amended) A method according to claim 64, wherein ~~at least one of R_1, R_2 and R_3 is substituted or unsubstituted nitroso (C1-C18) and~~ the hydroxylamine is selected from:
N-(N-methyl-N-nitroso-amino)methyl hydroxylamine,

N-(N-methyl-N-nitroso-2-amino)ethylhydroxylamine,
N-(N-methyl-N-nitroso-3-amino)propylhydroxylamine and
N-(p-nitroso)benzylhydroxylamine.

92. (Previously presented) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted oxime.

93. (Currently amended) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) oxime and ~~the R~~ said at least one of R_1, R_2 and R_3 is selected from: acetaldoxime, propionaldoxime, butanaldoxime and benzaldoxime.

94. (Currently amended) A method according to claim 64, wherein ~~at least one of R_1, R_2 and R_3 is substituted or unsubstituted oxime (C1-C18) and~~ the hydroxylamine is selected from:

Acetaldoxime-3-hydroxylamine,
Propionaldoxime-4-hydroxylamine,
Butanaldoxime-5-hydroxylamine and
(4-benzaldoxime)1-methylhydroxylamine.

95. (Previously presented) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C10) hydrazone.

96. (Currently amended) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C10) hydrazone and ~~the R~~ said at least one of R_1, R_2 and R_3 is selected from: acetaldehyde hydrazone, propanaldehyde hydrozone, butanaldehyde hydrazone and phenylhydrazone.

97. (Currently amended) A method according to claim 64, wherein ~~at least one of R_1, R_2 and R_3 is substituted or unsubstituted hydrazone (C1-C10) and~~ the hydroxylamine is selected from

1-hydroxylamine-acetaldehyde hydrazone,
1-hydroxylamine-butanaldehyde hydrazone

1-hydroxylamine-propanaldehyde hydrazone,

and

1-hydroxylamine-benzylaldehyde hydrazone.

98. (Previously presented) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted azo.

99. (Currently amended) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted azo and ~~the R~~ said at least one of R_1, R_2 and R_3 is selected from: azobenzene, p-(phenylazo)benzyl and p-diazobenzyl.

100. (Currently amended) A method according to claim 64, wherein ~~at least one of R_1, R_2 and R_3 is substituted or unsubstituted azo and~~ the hydroxylamine is selected from:
N-(p-phenylazo)benzylhydroxylamine,
N-(p-diazobenzyl)hydroxylamine and
N-(p-methoxylphenylazo)benzylhydroxylamine.

101. (Previously presented) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) thiol.

102. (Currently amended) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) thiol and ~~the R~~ said at least one of R_1, R_2 and R_3 is selected from (C1-C18) alkylthiol selected from methyl, ethyl, propyl, butyl, pentyl and hexyl thiol, and arylthiol selected from thiophenol and benzylthiol.

103. (Currently amended) A method according to claim 64, wherein ~~at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) thiol and~~ the hydroxylamine is selected from:

N-(thiomethyl)hydroxylamine,
N-(2-thioethyl)hydroxylamine,
N-(3-thiopropyl)hydroxylamine and
N-(p-sulfhydryl)benzylhydroxylamine.

104. (Previously presented) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) sulfonic acid.

105. (Currently amended) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) sulfonic acid and ~~the R~~ said at least one of R_1, R_2 and R_3 is selected from methanesulfonic acid, ethanesulfonic acid, propanesulfonic acid, butanesulfonic acid and p-toluenesulfonic acid.

106. (Currently amended) A method according to claim 64, wherein ~~at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) sulfonic acid and~~ the hydroxylamine is selected from:

1-hydroxylamine-methanesulfonic acid,
1-hydroxylamine-ethane-2-sulfonic acid,
1-hydroxylamine-propane-3-sulfonic acid,
1-hydroxylamine-butane-4-sulfonic acid
and
N-(p-sulfobenzyl)hydroxylamine.

107. (Previously presented) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is halide.

108. (Currently amended) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is halide and ~~the R~~ said at least one of R_1, R_2 and R_3 is selected from F, Cl, Br and I.

109. (Currently amended) A method according to claim 64, wherein ~~at least one of R_1, R_2 and R_3 is halide and~~ the hydroxylamine is selected from:

N-(chloromethyl)hydroxylamine,
N-(bromomethyl)hydroxylamine,
N-(4-chlorobutyl)hydroxylamine,
N-(p-chlorobenzyl)hydroxylamine,

N-(2-chloroethyl)hydroxylamine,
N-(3-chloropropyl)hydroxylamine,
N-(p-fluorobenzyl)hydroxylamine and
N-(p-iodobenzyl)hydroxylamine.

110. (Previously presented) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted hydroxylamine.

111. (Currently amended) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted hydroxylamine and ~~R~~ said at least one of R_1, R_2 and R_3 is selected from N-methylhydroxylamine, N-ethylhydroxylamine, N-propylhydroxylamine N-butylhydroxylamine, N-pentylhydroxylamine, and N-benzylhydroxylamine.

112. (Currently amended) A method according to claim 64, wherein ~~at least one of R_1, R_2 and R_3 is is substituted or unsubstituted hydroxylamine and~~ the hydroxylamine is selected from:

Bis-methylhydroxylamine,
Bis-(2-ethyl)hydroxylamine,
Bis-(3-propyl)hydroxylamine and
Bis-benzylhdyroxylamine.

113. (Previously presented) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) phosphoester.

114. (Currently amended) A method according to claim 64, wherein at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) phosphoester and ~~the R~~ said at least one of R_1, R_2 and R_3 is selected from: dimethylphosphate, diethylphosphate, dipropylphosphate and benzylphosphate.

115. (Currently amended) A method according to claim 64, wherein ~~at least one of R_1, R_2 and R_3 is substituted or unsubstituted (C1-C18) phosphoester and~~ the hydroxylamine is selected from:

di-hydroxylaminemethylphosphate ester,
mono-hydroxylaminemethylphosphate ester,
mono-(1-hydroxylamine)-ethyl-2-phosphate ester,
di-(1-hydroxylamine)-2-ethylphosphate ester,
di-(1-hydroxylamine)-3-propyl-phosphate ester,
mono-(hydroxylamine-benzyl-phosphate ester and
di-hydroxylamine-benzylphosphateester.

116. (Previously presented) A method according to claim 62, wherein the method detects the ability of the hydroxylamine to reduce infarct volume in a rat permanent middle cerebral artery occlusion (MCAO) stroke model.

117. (Currently amended) A method according to claim 62, wherein the method detects the ability of the hydroxylamine to ~~protect against~~ reduce amyloid β peptide-induced neuronal cell death.

118. (Previously presented) A method according to claim 62, wherein the method detects the ability of the hydroxylamine to reduce inflammation caused by LPS and INF-γ in E16 rat cortical neuronal cells.

119. (Previously presented) A method according to claim 62, wherein the method detects the ability of the hydroxylamine to reduce β-amyloid-induced increased release of interleukin-1β in human monocyte THP-1 cells.

120. (Currently amended) A method according to claim 62, wherein the method detects the ability of the hydroxylamine to ~~protect against~~ reduce amyloid β peptide-induced locomotor impairment in rats.

121. (Previously presented) A method according to claim 62, wherein the method detects the ability of the hydroxylamine to reduce spatial learning deficit in rats caused by N-nitro-L-arginine.

122. (Previously presented) A method according to claim 62, wherein the method detects the ability of the hydroxylamine to reduce induction of experimental allergic encephalomyelitis (EAE) by injection of myelin basic protein (MBP) peptides in rats.

123. (Previously presented) A method according to claim 62, wherein the method detects the ability of the hydroxylamine to reduce weight loss resulting from injection of myelin basic protein (MBP) peptides in rats.

124. (Previously presented) A method according to claim 62, wherein the method detects the ability of the hydroxylamine to reduce acquisition learning deficit in Fas mutated autoimmune mice.

125. (Previously presented) A method according to claim 62, wherein the method detects the ability of the hydroxylamine to reduce neuron loss following brain ischemia and reperfusion injury in gerbils resulting from experimental bilateral carotid occlusion.

126. (Previously presented) A method according to claim 62, wherein the method detects the ability of the hydroxylamine to reduce loss of temporal/spatial short term memory following brain ischemia and reperfusion injury in gerbils resulting from experimental bilateral carotid occlusion.

127. (Previously presented) A method according to claim 62, wherein the method detects the ability of the hydroxylamine to reduce infarct volume following brain ischemia and reperfusion injury in gerbils resulting from experimental bilateral carotid occlusion.

128. (Previously presented) A method according to claim 62, wherein the method detects the ability of the hydroxylamine to reduce lethality volume following brain ischemia and reperfusion injury in gerbils resulting from experimental bilateral carotid occlusion.

129. (Previously presented) A method according to claim 62, wherein the method detects the ability of the hydroxylamine to reduce βAP-mediated inactivation of glutamine synthetase (GS) and creatine kinase (CK) in rat brain tissue extracts and in cultured hippocampal neurons and glia.

130. (Previously presented) A method according to claim 62, wherein the method detects the ability of the hydroxylamine to reduce oxidation-caused side effects of adriamycin anticancer therapy in mice. as measured by acute lethality.

131. (Previously presented) A method according to claim 62, wherein the method detects the ability of the hydroxylamine to delay senescence in IMR90 human lung fibroblasts.